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Preliminary Ecological Appraisal (PEA)  
(Incorporating Extended Phase 1 Habitat Survey)

Report Prepared on behalf of Liverpool Golf Ltd.  
For the site of Liverpool Golf Centre, Caldway Drive, Liverpool, L27 0BY.  
08/04/2015

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# **Preliminary Ecological Appraisal (PEA)**

## **Background to Survey**

The client, Keith Maher, on behalf of Liverpool Golf Ltd., has commissioned Arbtech Consulting Ltd. to undertake a Preliminary Ecological Appraisal [PEA] (incorporating an Extended Phase 1 Habitat Survey for a Golf course at Liverpool Golf Centre, Caldway Drive, Liverpool, L27 0BY. The proposed plans involve importing inert materials onto site in order to raise the perimeter of the range by 2m, in effect creating a bund in order to stop golf balls entering the neighboring course.

There is also a section to be raised on the south east area of the site also by ~2m in order to create a golfing green area.

The purpose of the survey was to establish the baseline ecological condition of the site and the potential zone of influence (on any ecological receptors that might be impacted upon) of the proposals; determine any further evaluations that might be necessary to evaluate the ecological condition (Phase II surveys); and make any general mitigation and enhancement recommendations that are appropriate.

## **Summary of Recommendations**

If the PEA determines that the proposals will not impact upon habitat or species considered to be of nature conservation value (ecological receptors) then it is unlikely that any further evaluation will be necessary to achieve planning determination. However if it appears that the proposals do impact upon ecological receptors then further scientific investigation may be required and it is likely that some form of mitigation will need to be offered. Furthermore planning authorities are now under an obligation to seek enhancements (positive improvements) for biodiversity through the planning system.

Taking into consideration the desk study and site survey findings, this report concludes that the proposed development might produce impacts upon ecological receptors and that these require further evaluation.

Therefore, in order to provide adequate support for this planning application, the following species/habitats require further evaluation:

- Reptiles (Reptilia)
- Amphibians (Amphibia)

A full specification for these surveys that are appropriate to the scale and scope of the proposed development can be found in the 'Conclusions' and 'Recommendations' sections of this report.

#### Summary of Potential Mitigation, Potential Impact, Loss and Gain

| Habitat/Species concerned | Potential impact/loss?                                                                                                                                                                                     | Potential mitigation required* *(Further surveys to confirm exact requirements).                                                                                                                                                                                | Potential ecological gain?                                                                                                                                                                               |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Habitats                  | SSSI's and wildlife sites are located in the area (please refer to data) however these are at a sufficient distance that it is assessed will not be affected by the works.                                 | No mitigation required.                                                                                                                                                                                                                                         |                                                                                                                                                                                                          |
| Invertebrates             | Limited habitat with the potential to support rare invertebrates.                                                                                                                                          | No further surveys.                                                                                                                                                                                                                                             |                                                                                                                                                                                                          |
| Amphibians                | An offsite pond will be not affected by the development directly . However it scored as 'good' on the HSI test and is ~150m from the site (ponds within 500m of a site are considered as being potentially | Full great crested newt (GCN) surveys required.<br>An eDNA test could be taken first to establish whether the full surveys are needed as this will identify if GCN are using the pond <sup>1</sup> .<br>Consisting of a minimum of 4 survey visits utilising at | If protected amphibians are using the pond, it will be necessary to consider whether the terrestrial habitat on site is likely to be used by land foraging GCN and if so how any loss of habitat will be |

<sup>1</sup> In 2014 eDNA testing became an acceptable methodology for checking for GCN presence/absence by a water sample. However the laboratory analysis turnaround in 2014 was too slow to assist projects. However two UK based organisations are offering rapid turnaround options in 2015.

|          |                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                 |
|----------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|          | material to a planning decision)                                                                                  | least three standard search techniques for GCN. If GCN re located at least a further two visits will be required. Visits must take place between mid - April and mid- May.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | mitigated/compensated for.                                                                                      |
| Badgers  | No badger evidence found such as setts, hairs or runs.                                                            | <p>No further surveys are required.</p> <p>However, because badgers are a dynamic mobile species, the following recommendations are given in order to mitigate against potential harm to badgers during the works:</p> <ul style="list-style-type: none"> <li>• Any trenches dug should either be covered at night or have a rough sawn plank placed in them to act as a ramp for any wildlife which may fall in.</li> <li>• Security lighting to be directed away from the undergrowth.</li> <li>• Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.</li> </ul> |                                                                                                                 |
| Bats     | None, because bats are not affected by works. Existing building/trees will not be affected by planning proposals. | No further surveys.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                 |
| Barn Owl | No evidence of barn owl roosting or nesting. Limited foraging provision on site.                                  | No further surveys.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Rough grass margins could be developed around the site boundaries as a wildlife enhancement providing potential |

|               |                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                 |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------|
|               |                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | foraging resources for barn owls.                                                               |
| Breeding Bird | <p>Although no nests were found on site, birds could use the boundary trees.</p> <p>The trees belong to the adjacent golf course boundary line and therefore will not be affected as they are not part of the site.</p> <p>No suitable trees located within the boundary line.</p> | No further surveys.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                                                                 |
| Reptiles      | <p>The site has potential reptile habitat of high significance. The grass, bramble and hedge areas all create a mosaic of habitats that offer a range of foraging and shelter potential. Nearby golf course and undisturbed land also increases habitat potential.</p>             | <p>Full Reptile Survey.</p> <p>A minimum of 8 visits in suitable weather (9 degrees Celsius - 18 degrees Celsius) are required, one of these is to set-up the survey.</p> <p>Refuges are placed in the disturbed ground area and along the hedgerows/long grass, and these are then checked in subsequent visits. These checks should be at least a week apart. This can be done starting from April, the season ending in October, with the optimal being April, May and September. Any reptiles are recorded.</p> <p>If reptiles are found, a reptile mitigation plan will need to be created for the site.</p> |  | Reptile refuge and long grass margins will increase habitat for these animals in the long term. |

|                           |                                                                               |                     |  |
|---------------------------|-------------------------------------------------------------------------------|---------------------|--|
| Other Terrestrial Mammals | No others protected terrestrial mammals will be affected by this development. | No Further surveys  |  |
| Problematic Species       | None noted on site.                                                           | No further surveys. |  |

## **1.0 The Company and Contact Information**

Established in 2005, Arbtech Consulting Limited provides arboricultural and ecological consultancy services in respect to planning and development, throughout the UK.

Tel 01244 660558

@ email@arbtech.co.uk

Web [www.arbtech.co.uk](http://www.arbtech.co.uk)

## **2.0 The Surveyor**

The surveyor and principal author of this report is Amy Campion BSc (Hons)

## **3.0 Protected Species Licenses**

### Bats

England: ACCREDITED AGENT OF FULL NE BAT LICENSE

## **4.0 The Client**

The client is Liverpool Golf Ltd.

## **5.0 The Site of Proposed Development**

The client is preparing a planning application to import inert materials on site to create a raised border and a taller green area to the south east of the site at Liverpool Golf Centre, Caldway Drive, Liverpool, L27 0BY.

## **6.0 The Survey Brief**

The client commissioned Arbtech Consulting Ltd to undertake a PEA in accordance with current guideline standards<sup>2</sup>. The PEA includes an extended Phase 1 Habitat Survey that has been conducted in accordance with the technique outlined in the Joint Nature

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<sup>2</sup> CIEEM 2012. Guidelines for Preliminary Ecological Appraisal.  
[http://www.cieem.net/data/files/Resource\\_Library/Technical\\_Guidance\\_Series/GPEA/GPEA\\_April\\_2013.pdf](http://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/GPEA/GPEA_April_2013.pdf)  
British Standard BS42020: Biodiversity – Code of Practice for Planning and Development

Conservation Committee (“JNCC”) Handbook for Phase 1 Habitat Survey a technique for environmental audit (2010).

## **7.0 Controls**

This survey provides a ‘snap-shot’ of the assessed habitat and wildlife value of the site at the time of survey only and may require further survey effort to provide robust, scientifically valid evidence of species likely-absence.

Shelf-life - there is a lack of clarity about the period for which a PEA is accepted as being valid. Common practice dictates that most planning authorities will accept a survey report that is less than two years old (from the date of the field survey). Older surveys are likely to have to be refreshed by a further visit and report update.

## **8.0 Data Searches**

A 2km Data Search has been carried out to determine any sites of nature conservation importance in the area and to reveal any existing biological records for the search area.

The full data search is provided in Appendix VI. Please note that the data search is to be treated as **CONFIDENTIAL** and is not suitable for release onto public registers. It should be removed from any documentation transferred onto publicly accessible registers. The data search is provided in full for officer verification purposes and should not be shared with officers not involved in the consent determination.

## **9.0 Date of the Survey**

8<sup>th</sup> April 2015.

## **10.0 Seasonality**

The normal survey window for undertaking this type of evaluation is between mid-March and mid-October (south)/1<sup>st</sup> April and 30<sup>th</sup> September (north).

This survey was conducted within the normal survey window.

## 11.0 Informative

Table 1: Summary of Pertinent Legislation and Planning Policy Relevant to the Protection of Bats in the UK

| Location of Site | Transposing EC Habitats Directive                                | Other Relevant Legislation                                                                                                                      | Planning Policy                                                                    |
|------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| England          | Conservation of Habitats and Species Regulations 2010.           | Wildlife and Countryside Act 1981 as amended.<br>Countrywide and Rights of Way Act 2000.<br>Natural Environment and Rural Communities Act 2006. | National Planning Policy Framework ("NPPF").                                       |
| Wales            | Conservation of Habitats and Species Regulations 2010.           | Wildlife and Countryside Act 1981 as amended.<br>Countrywide and Rights of Way Act 2000.<br>Natural Environment and Rural Communities Act 2006. | Technical Advice Note ("TAN") 5.                                                   |
| Scotland         | Conservation (Natural Habitat & c.) Regulations 1994 as amended. | Wildlife and Countryside Act 1981 as amended.<br>The Nature conservation (Scotland) Act 2004.                                                   | National Planning Policy Guidance ("NPPG") 14 and Planning Advice Note ("PAN") 60. |

A summary of legislation relevant to individual species can be found at Appendix IV.

## 12.0 The Survey Methodology

In order to fully assess the potential value of habitats at the site, the surveyor has employed widely accepted national standards set out in the JNCC (2010) publication Handbook for Phase 1 Habitat Survey: a technique for environmental audit.

The report includes for a Phase 1 Habitat Map (found at Appendix I), in addition to a full species list and target notes (found at Appendix II.)

Inspections make use of binoculars and cameras where appropriate.

1. The survey is performed during daylight hours. The site was surveyed on 8<sup>th</sup> April 2015. The site was visited and the vegetation was mapped onto an Ordnance Survey Mastermap provided by the client using standard colour codes for the ninety plus specified habitat types as defined in the JNCC guidelines. The surrounding land was similarly mapped but third-party land was only accessed where open and is assessed on the basis of what could be viewed from publically accessible areas.
2. Target notes were made for particular areas of interest and annotated onto the map.
3. An ecological “walkover” survey of the site was also conducted. The survey looks for direct and indirect evidenced (through sightings or field signs) of protected species and speculates on likely presence based upon habitat type and quality.

### 13.0 Protected Taxa Habitat Potential

Table 2: Species potential defined by integrating national guidelines e.g. Hundt 2012

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Confirmed</b>  | Species are found to be present during the survey.<br>Evidence of species' activity is found to be present during the survey.                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>High</b>       | Buildings, trees or other structures with features of particular significance for use by protected species e.g. nesting habitat, roosting opportunities, ponds.<br>Habitat of high quality for foraging e.g. broadleaved woodland, tree-lined watercourses and grazed parkland.<br>Site is connected with the wider landscape by strong linear features that would be used by commuting species e.g. river and or stream valleys and hedgerows.<br>Site is close to known locations of records for protected species. |
| <b>Medium</b>     | Several potential habitat opportunities in buildings, trees or other structures.<br>Habitat could be used for foraging e.g. trees, shrub, grassland or water.<br>Site is connected with the wider landscape by linear features that could be used by commuting species e.g. lines of trees and scrub or linked back gardens.                                                                                                                                                                                          |
| <b>Low</b>        | A small number of less significant habitat opportunities.<br>Isolated habitat for foraging e.g. a lone tree or patch of scrub.<br>An isolated site not connected by prominent linear landscape features.                                                                                                                                                                                                                                                                                                              |
| <b>Negligible</b> | No suitable habitats observed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

Table 2 (above) presents a scale continuum against which the significance of habitat value and opportunities for protected species at the site can be graded. By referring to this continuum and using their expert judgment, surveyors classify features such as habitats, buildings etc. as representing low, medium, high value or confirmed presence.

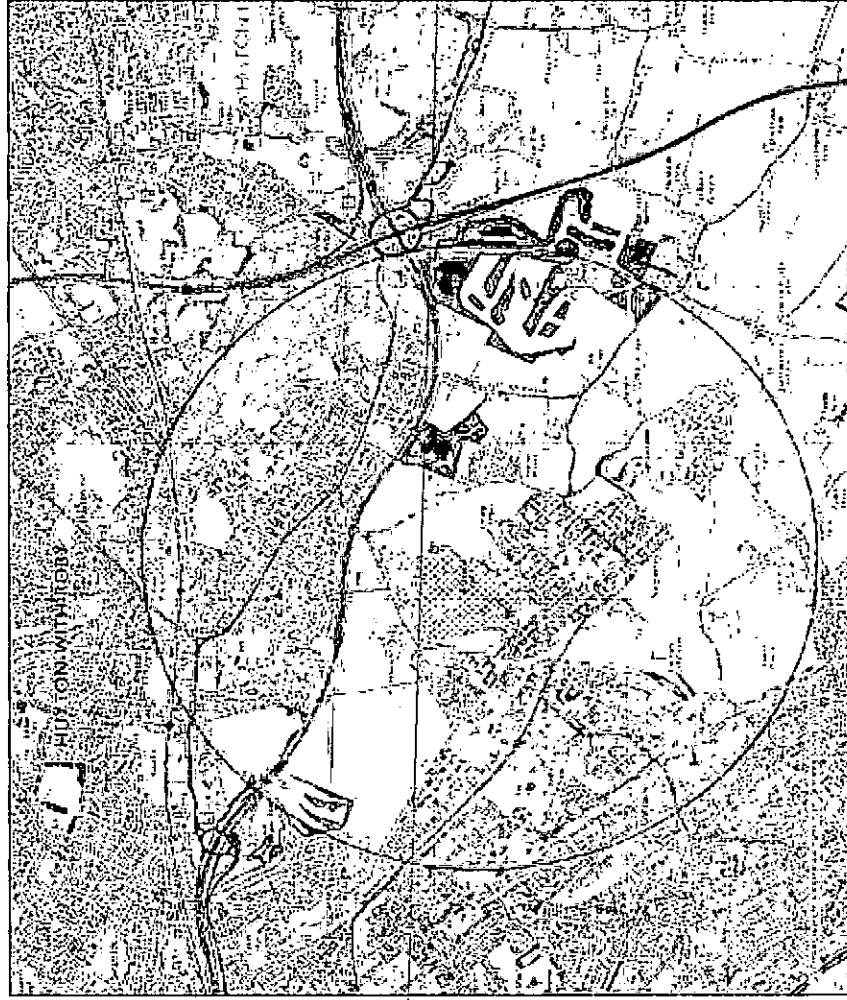
## 14.0 Survey Results

Table 3: Desk study results, habitats and species recorded on site

|                    |                                                                                                                                                                                                                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Desk Study Records | The survey preparation has been informed by the use of a desk study utilising: - aerial images from Google Earth, MAGIC and other freely available information e.g. Natural England's nature on the map website, and OS Opendata 2010 using grid reference SJ443888 and postcode L27 0BY. |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Magic**

**Liverpool Golf Centre Habitats 2km**



## Magic guidance: Discharges

Any discharge of water or liquid waste that is more than 20m<sup>3</sup>/day. The water needs to either be discharged to ground (i.e. to seep away) or to surface water, such as a beck or stream. Discharges to mains sewer are excluded.

| Local Environment                                | <div data-bbox="158 1424 192 1651"> <b>Site Location:</b> </div> <div data-bbox="208 156 318 1651"> <p>The site is a golf range, therefore immediate surroundings consist of amenity grassland. Adjacent to the site is a golf course (more amenity grassland). To the south the site is the residential area and primary school of Netherley. Sewage works are located to the east.</p> </div> <div data-bbox="377 523 412 1651"> <p>The following habitat features for protected species in general are present:</p> </div> <table border="1" data-bbox="471 156 1287 1651"> <thead> <tr> <th data-bbox="471 909 506 1651">Landscape Features suitable for bat use</th><th data-bbox="471 156 506 909">Present within 2km + notes (distances)</th></tr> </thead> <tbody> <tr> <td data-bbox="522 909 556 1651">Water Courses</td><td data-bbox="522 156 929 909"> <p>Netherley brook is located to the east of the site (approx. 650m) with multiple sinks and drainage areas on the neighboring golf course. There is a pond located approx. 150m to the south of the site. Multiple ponds located on site of the sewage works next to the brook, these obtain sufficient barriers to the site and are 600m+ from site boundary. There is also a pond located on Lee Park Golf course with is over 1km from site, Great-crested newts have been recorded here.</p> </td></tr> <tr> <td data-bbox="945 909 980 1651">Woodlands</td><td data-bbox="945 156 1055 909"> <p>Variety of deciduous and broadleaved woodlands within 2km, mainly to the east and south east of the site (refer to Magic map).</p> </td></tr> <tr> <td data-bbox="1070 909 1105 1651">Linear Features e.g. tree lines, hedges, gardens</td><td data-bbox="1070 156 1136 909"> <p>Hedgerows to the east, west and south of the site.</p> </td></tr> <tr> <td data-bbox="1152 909 1186 1651">Pasture fields</td><td data-bbox="1152 156 1274 909"> <p>Approx. 1km to the east of the site.<br/>Amenity grassland immediately surrounds the sites.</p> </td></tr> </tbody> </table> | Landscape Features suitable for bat use | Present within 2km + notes (distances) | Water Courses | <p>Netherley brook is located to the east of the site (approx. 650m) with multiple sinks and drainage areas on the neighboring golf course. There is a pond located approx. 150m to the south of the site. Multiple ponds located on site of the sewage works next to the brook, these obtain sufficient barriers to the site and are 600m+ from site boundary. There is also a pond located on Lee Park Golf course with is over 1km from site, Great-crested newts have been recorded here.</p> | Woodlands | <p>Variety of deciduous and broadleaved woodlands within 2km, mainly to the east and south east of the site (refer to Magic map).</p> | Linear Features e.g. tree lines, hedges, gardens | <p>Hedgerows to the east, west and south of the site.</p> | Pasture fields | <p>Approx. 1km to the east of the site.<br/>Amenity grassland immediately surrounds the sites.</p> |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------|
| Landscape Features suitable for bat use          | Present within 2km + notes (distances)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                         |                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                       |                                                  |                                                           |                |                                                                                                    |
| Water Courses                                    | <p>Netherley brook is located to the east of the site (approx. 650m) with multiple sinks and drainage areas on the neighboring golf course. There is a pond located approx. 150m to the south of the site. Multiple ponds located on site of the sewage works next to the brook, these obtain sufficient barriers to the site and are 600m+ from site boundary. There is also a pond located on Lee Park Golf course with is over 1km from site, Great-crested newts have been recorded here.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                         |                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                       |                                                  |                                                           |                |                                                                                                    |
| Woodlands                                        | <p>Variety of deciduous and broadleaved woodlands within 2km, mainly to the east and south east of the site (refer to Magic map).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                         |                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                       |                                                  |                                                           |                |                                                                                                    |
| Linear Features e.g. tree lines, hedges, gardens | <p>Hedgerows to the east, west and south of the site.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                         |                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                       |                                                  |                                                           |                |                                                                                                    |
| Pasture fields                                   | <p>Approx. 1km to the east of the site.<br/>Amenity grassland immediately surrounds the sites.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                                                                                                                                       |                                                  |                                                           |                |                                                                                                    |

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                      | <p><u>Weather conditions at time of survey:</u></p> <p>Temperature: 15°C.</p> <p>Cloud Cover: 0%.</p> <p>Precipitation: none.</p> <p>Wind: 0/8.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Habitats</b>                                                                      | <b>Description of Features</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| A3 Parkland and Scattered Trees                                                      | <p>Ash (<i>Fraxinus excelsior</i>) saplings located towards edges of north east corner of the site. Conifer saplings have been planted at the entrance.</p> <p>All other trees are located outside the site and on adjacent site boundaries, there were largely ash trees (<i>Fraxinus excelsior</i>).</p>                                                                                                                                                                                                                                                                                                                                                                                                                 |
| B6 Semi Improved Grassland                                                           | <p>In the areas that are not maintained (this is where the land is to be raised to create a green) these exhibited more species and was semi-improved grassland as opposed to the majority of the site which was amenity grassland. The grassland was not particularly high quality, it exhibited species such as sow thistle (<i>Sonchus oleraceus</i>), creeping thistle (<i>Cirsium arvense</i>), broad-leaved dock (<i>Rumex obtusifolius</i>) and Yorkshire fog (<i>Holcus lanatus</i>).</p>                                                                                                                                                                                                                          |
| J1 Cultivated/Disturbed Land (Including Arable, Amenity Grassland, Introduced Scrub) | <p>The majority of site was amenity grassland used as a golfing range.</p> <p>The grassland contained only a few species and was typical of amenity grassland, perennial ryegrass (<i>Lolium perenne</i>) dominated the site. Other species, such as daisies (<i>Bellis perennis</i>) and dandelions (<i>Taraxacum officinale</i>) were also abundant, additional species such as nettles were located towards the site boundaries.</p> <p>Amenity grassland is also present at the entrance of the site on either side of the driveway/car park which contained the same species as listed above. There is a small section of bare ground next to the building and this is where they wish to import their materials.</p> |
| J2 Boundaries                                                                        | <p>The boundaries of the site largely consist of wire and mesh fencing particularly along the golf range grass boundaries. The entrance and car park had a walled boundary and there is also a fenced boundary from the edge of the green to the car park.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|----------|-------------------------------|-----------|-----|-------------|-----|---------------|------|-------|-----|------|------|
| J3 Built Up Areas Including Buildings and Hard Standing | There was one building on site, this was the reception, shop and café for the golf range. The building is brick built with interlocking concrete roof tiles. The rear of the building is constructed of metal sheeting/structure where the range is located. The age of the building is approx. 20 years old and is in good condition. An external examination of the building was performed to access for bat potential and apart from minor gaps in the lead flashing the building did not seem to present many bat roosting features. An internal examination was not deemed necessary as the building will not be touched or affected in any way to achieve the raised borders and golfing green area on site.<br><br>Also on site, was a graveled and concreted driveway/car park and concreted stage for the golf range. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |
| Species                                                 | Species potential defined in Table 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Description of features suitable to support a population OR external habitat connectivity to the site                                                                                                                                                                                                                                                                                                                                                                                               |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |
| Invertebrates                                           | Low                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Areas of longer grass could provide some suitable habitats for a limited range of invertebrates.                                                                                                                                                                                                                                                                                                                                                                                                    |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |
| Amphibian                                               | High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>The pond was approx. 150m south of site, surrounded by good terrestrial habitat and other favourable conditions for GCN. Full HSI results in the table below:</p> <table><tr><td>HSI Criteria</td><td>Pond 1</td></tr><tr><td>Location</td><td>1 (optimal geographical zone)</td></tr><tr><td>Pond area</td><td>0.4</td></tr><tr><td>Pond drying</td><td>0.9</td></tr><tr><td>Water Quality</td><td>0.67</td></tr><tr><td>shade</td><td>0.8</td></tr><tr><td>Fowl</td><td>0.67</td></tr></table> | HSI Criteria | Pond 1 | Location | 1 (optimal geographical zone) | Pond area | 0.4 | Pond drying | 0.9 | Water Quality | 0.67 | shade | 0.8 | Fowl | 0.67 |
| HSI Criteria                                            | Pond 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |
| Location                                                | 1 (optimal geographical zone)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |
| Pond area                                               | 0.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |
| Pond drying                                             | 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |
| Water Quality                                           | 0.67                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |
| shade                                                   | 0.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |
| Fowl                                                    | 0.67                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |        |          |                               |           |     |             |     |               |      |       |     |      |      |

|                                                  |            |                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                  |            | <p>Fish 0.67</p> <p>Ponds <input type="text" value="0.1"/></p> <p>Terrestrial habitat 1</p> <p>Macrophytes <input type="text" value="0.9"/></p> <p>(Sum of Factors)/10 0.7</p> <p>The pond scored as 'good' on the HSI test.</p> <p>No other ponds within 500m of the site. The pond is of high quality and potential for Great-crested newts.</p> |
| Badger                                           | Negligible | No badger setts were found to be present on site. No other badger evidence, e.g. latrines, runs or hair were found to be present.                                                                                                                                                                                                                  |
| Bat                                              | Negligible | The trees are largely on the neighboring golf courses property, these were mainly ash and did not appear to have any potential cracks or crevices showing bat roost potential. The planned works do not affect any trees on/ on neighboring site.                                                                                                  |
| Barn Owl                                         | Negligible | There are no buildings or trees on site for barn owl roosting or nesting. There is also no suitable habitat on site for barn owl foraging. The grass is of too poor quality to sustain a small mammal population.                                                                                                                                  |
| Bird                                             | Negligible | There is no suitable cover on site which birds could nest in; the grass is very thin and sparse. The site is also very exposed. Nests could be located in trees found on the neighboring golf course however these would be unaffected by the works and off site. Song bird was heard across site.                                                 |
| Other terrestrial mammals e.g. otter, water vole | Negligible | No evidence of any other protected mammal was found.                                                                                                                                                                                                                                                                                               |
| Reptile                                          | Medium     | Whilst the amenity grassland on site was unsuitable for reptile habitat. The grassland at the rear of the site where they are wishing to raise the land by approx. 2m, does show potential. Long tussocky grass, brambles and the scrub like border located on the                                                                                 |

|                     |            |                                                                                                                                                                                       |
|---------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |            | neighboring golf course was of good quality reptile habitat. The adjacent land to the south of the site was ideal habitat and they could easily migrate onto the site from this area. |
| Problematic Species | Negligible | None noted on site.                                                                                                                                                                   |

A Phase 1 map can be found at Appendix I illustrating the habitats.

Table 4: Summary of Impacts

| Habitat/Species concerned | Potential impact/loss?                                                                                                                                                                       |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Invertebrates             | None, planning proposals involve the heightening of grassy areas that are already there and so the environment will largely be the same for any invertebrates that use the site.             |
| Amphibian                 | Pond is off site and will not be changed, however as GCN are a migratory species and the site is in close proximity this could cause a loss to the species if they are breeding in the pond. |
| Badger                    | None, no badger evidence on site or appropriate long grass to support badgers.                                                                                                               |
| Bat                       | None, because if bats are present internally in the main golf building they will not be affected by the works.                                                                               |

|                                                  |                                                                                                                                                                        |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Barn Owl                                         | None, no suitable buildings or trees on site to support barn owls.                                                                                                     |
| Bird                                             | No appropriate trees on site, no sign that they were using the building. In the event that they are, this will not affect them as these are not affected by the works. |
| Other terrestrial mammals e.g. otter, water vole | No impact on other terrestrial mammals. Water voles have been recorded at Netherley Brook however this is 500m+ from site and records are all over 5 years old.        |
| Reptile                                          | Full reptile survey will determine if reptiles are using the site or not, to which appropriate mitigation can be given.                                                |
| Problematic Species                              | None noted on site, if any are discovered seek the advice of a specialist.                                                                                             |

## 15.0 Conclusions and Recommendations

The NPPF and ODPM Circular 06/05 require that planning decisions are based on complete and timely ecological information. Further, it is required by Natural England's 'Standing Advice' that protected species information must be available before a decision can be made.

Following this guidance, it is highly unlikely that the local planning authority will defer the provision of further protected species survey work as a condition of any planning consent.

At this time we have no reason to believe the local planning authority will consider that this level of survey will provide them with inadequate information or lacks scientific robustness. On occasion though, it can become necessary to perform further surveys even after planning consent is given, where there are extenuating circumstances e.g. if protected species or habitats are found at a later date.

However, separately to mitigating and compensating for unavoidable ecological impacts, government has made it clear through the NPPF and circular 06/05 that development requires the enhancement of the quantity and quality of biodiversity and habitat.

Where the local planning authority is minded to grant consent for the proposed development, some basic and cost effective forms of ecological enhancement could be adequately secured through the use of an appropriately worded condition. Suggestions for such measures are referred to below, in Table 4.

Table 5: Conclusions and Recommendations

| Species/Habitats | Species potential defined in Table 2. | Conclusions                                                                                                                                                                                              | Recommendations                                                                                                                                                                                                                                                                                                                                                                                | Enhancements under NPPF and Circular 06/05 |
|------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Habitats         | Negligible                            | All species and habitats found are common and widespread, no rare or unusual plants or habitats were found. The works are not close enough to or large enough in scope to affect any statutory sites.    | No further surveys.                                                                                                                                                                                                                                                                                                                                                                            |                                            |
| Invertebrates    | Low                                   | Invertebrates will not be affected as the grassy areas will remain grassy areas just at a higher level. Plenty of suitable environment nearby if disturbed by the works whilst they are being completed. | No Further Surveys.                                                                                                                                                                                                                                                                                                                                                                            |                                            |
| Amphibian        | High                                  | The pond located approx. 150m south of the site scored as 'good' on the HSI test. As such, it needs to be established whether GCN use the pond before works commence.                                    | Full GCN surveys required.<br>Consisting of a minimum of 4 dusk/dawn checks utilizing at least three methods of finding GCN. If GCN re located at least a further two visits will be required. Visits must take place between mid - April and mid- May.<br>An eDNA test could be taken first to establish whether the full surveys are needed as this will identify if GCN are using the pond. |                                            |
| Badger           | Negligible                            | No badger setts were found to be present on site. No other badger evidence, e.g. latrines, runs or hair were found to be present.                                                                        | No further Surveys.                                                                                                                                                                                                                                                                                                                                                                            |                                            |

|               |            |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                      |
|---------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bats          | Negligible | Buildings and neighboring trees will be unaffected by the works. At initial survey stage these seemed to be unlikely locations for roosts, however if they were being used the works should have no impact on bats.                   | No further Surveys.                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Lighting regimes should not be altered incase bats are using the site and this affects their flight path. The raised land and boundary edges should not affect this. |
| Barn Owl      | Negligible | There are no buildings or trees on site suitable for barn owl roosting or nesting. There is also limited suitable habitat on site for barn owl foraging. The majority of the grass is too short to sustain a small mammal population. | No further surveys.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                      |
| Bird          | Negligible | There is no suitable cover on site which birds could nest in; the grass is very thin and sparse. The site is also very exposed. Suitable habitat can be found on neighboring golf course.                                             | No further surveys.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                      |
| Other mammals | Negligible | No evidence of any other protected mammal was found.                                                                                                                                                                                  | No further surveys.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                      |
| Reptiles      | Negligible | The grassland present on site is of suitable quality to support a reptile population.                                                                                                                                                 | Full Reptile surveys required.<br>A minimum of 8 visits in suitable weather (9 degrees Celsius - 18 degrees Celsius) are required, one of these is to set-up the survey.<br>Refuges are placed in the disturbed ground area and along the hedgerows/long grass, and these are then checked in subsequent visits. These checks should be at least a week apart. This can be done starting from April, the season ending in October, with the optimal being April, May and |                                                                                                                                                                      |

|                     |            |                                                                        |                                       |                                                                                                                                             |
|---------------------|------------|------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Problematic Species | Negligible | No evidence of well-known problematic species were identified on site. | September. Any reptiles are recorded. | Hectares of un-kept land to the south of site, if any Japanese Knotweed is present here, care should be taken to not transfer this to site. |
|---------------------|------------|------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|

The habitat on site has been assessed as being of low nature conservation value and any losses of habitat are considered insignificant ecologically. Most protected species have been discounted by virtue of lack of direct sightings, or lack of field-signs or by implication because of the absence of important habitat. Two groups cannot be discounted without further assessment. These are amphibians and in particular the fully protected great crested newt. It is normal to consider ponds within 500m of a proposal as this has been demonstrated to be the typical range of this species centred on its breeding ponds. The newts forage and take refuge on adjacent terrestrial habitat. As a pond exists within 150m of the site that scores as having “good” habitat suitability for this species there is a possibility that land affected by the proposals could be contributing to a GCN population. Until 2014 it would have been necessary to conduct a full GCN presence/likely-absence survey for GCN at the pond (subject to third party agreement for access if necessary). However since 2014 it has been possible to take a water sample for environmental DNA (eDNA). If the eDNA test proves negative there should be no need for any further action. If the test proves positive it then becomes necessary to seek to undertake a full traditional survey. It is then necessary to make an evaluation of the site’s value to that population and provide appropriate mitigation and compensation measures to offset any negative effect.

It is also assessed that the site might support common reptile species. These animals enjoy limited statutory protection and their presence is a material consideration in a planning application. At this site it is considered that a reptile survey will be necessary to check for presence/likely-absence. If the survey determines a likely-absence no further action should be necessary. If presence is confirmed it will be necessary to develop a mitigation plan that describes how statutory protection of reptiles will be achieved at the site- typically by a set of coordinated actions that result in reptiles being removed from working areas in advance to protect them from injury or mortality.

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## 17.0 Document Production and Approval Record

| Status  | Issue | Surveyor                                                  | Date       |
|---------|-------|-----------------------------------------------------------|------------|
| Draft   | 1     | Amy Campion                                               | 09/04/2015 |
| Proofed | 2     | Chris Formaggia BSc (Joint Hons) CBiol CEnv MBS<br>MCIEEM | 15/02/2014 |
|         |       |                                                           |            |
|         |       |                                                           |            |

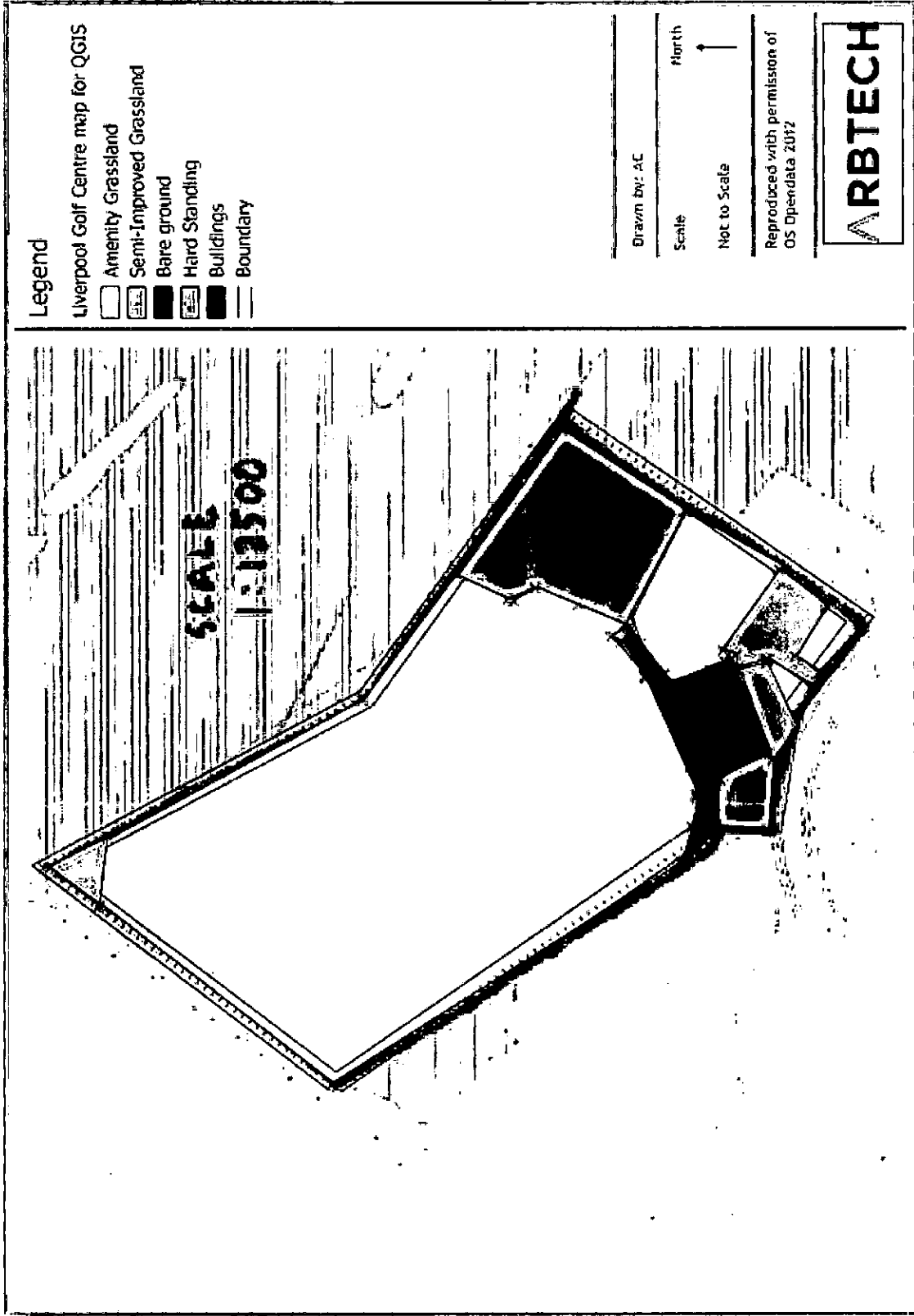
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Appendix I Phase 1 Habitat Map



## Appendix II Species

| Common Name        | Scientific Binomial         |
|--------------------|-----------------------------|
| Ash                | <i>Fraxinus excelsior</i>   |
| Brambles           | <i>Rubus</i> sp.            |
| Broad leaved Dock  | <i>Rumex obtusifolius</i>   |
| Common daisy       | <i>Bellis perennis</i>      |
| Creeping thistle   | <i>Cirsium arvense</i>      |
| Creeping buttercup | <i>Ranunculus repens</i>    |
| Dandelion          | <i>Taraxacum officinale</i> |
| Perennial ryegrass | <i>Lolium perenne</i>       |
| Ragwort            | <i>Jacobaea vulgaris</i>    |
| Sow thistle        | <i>Sonchus oleraceus</i>    |
| Yorkshire Fog      | <i>Holcus lanatus</i>       |

### Appendix III Site Photos



Figure 1: View of golf range from golf stand



Figure 2: Access area for inert materials

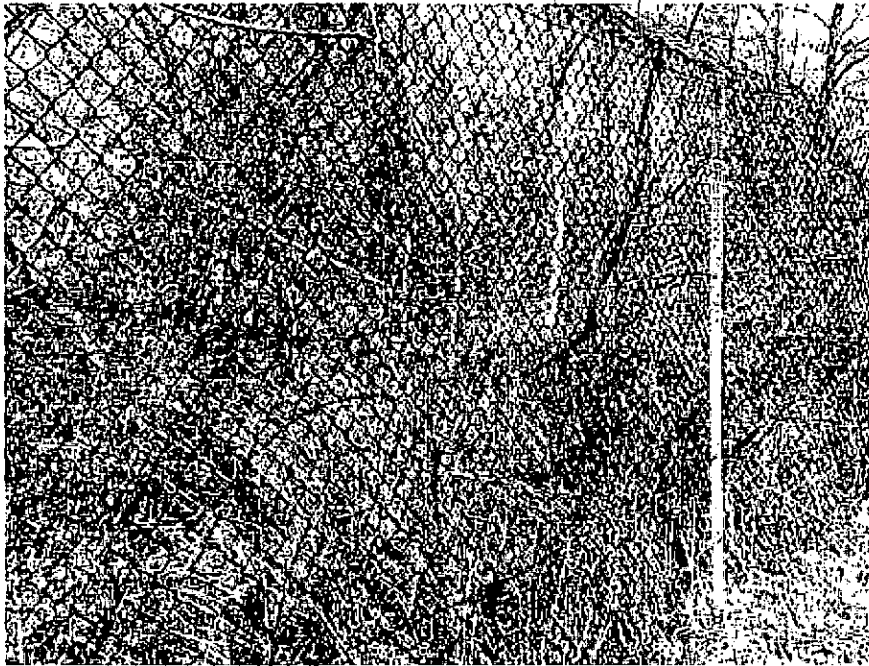


Figure 3: Example of boundary edge.



Figure 5: The grange looking (direction)

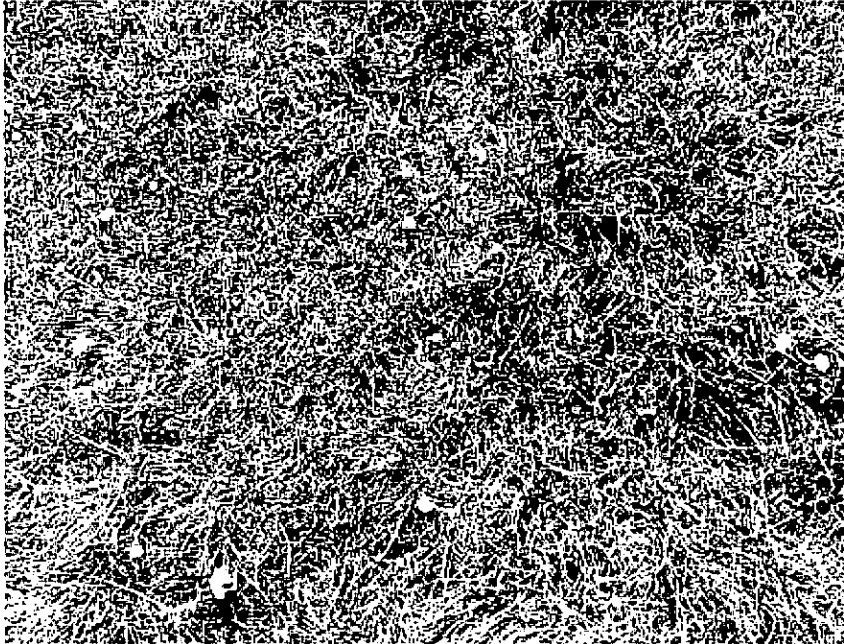


Figure 6: A close up of the typical condition of the grass sward (amenity grassland) within the survey site.

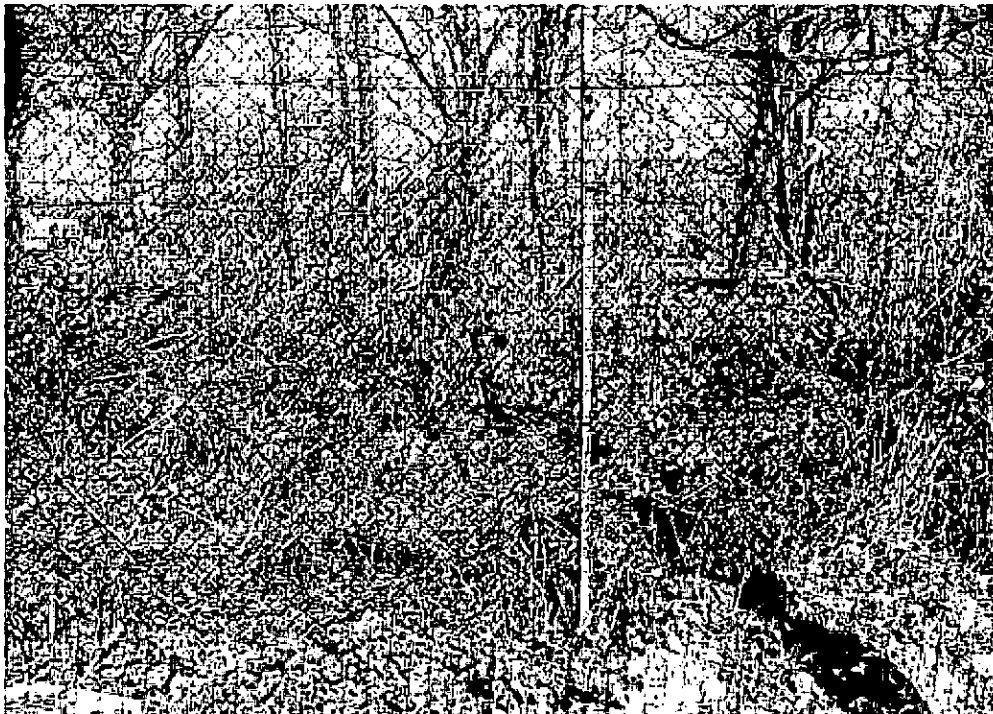


Figure 7: Boundary between the range and neighbouring golf cours



Figure 8: Unkempt corner



Figure 9: Long semi-improved grassland area (to be raised by approx. 2m with inert materials and then seeded to make a golfing green area)



Figure 10: Close up of the above figure

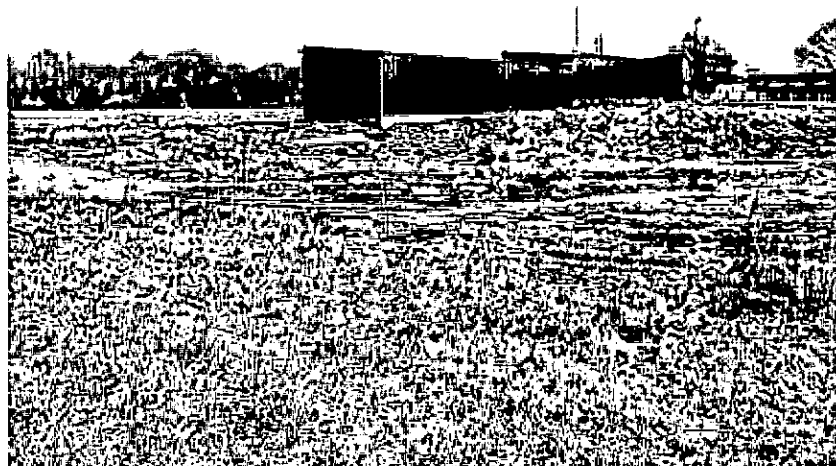
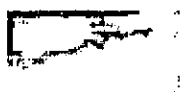


Figure 11: Area to be heightened (as per figure 9)



Figure 12: Area behind site with suitable reptile habitat.



Figure 13: Pond close to site (refer to HSI results)



Figure 14: Close up of above pond



Figure 15: Buidling (B1)



Figure 16: Car Park



Figure 17: Entrance



Figure 18: Close up of roof



Figure 19: Tight-fitting barge boards

## Appendix IV Summary of Legislation for Various Species

### Conservation Status of British Bats

The general consensus in Britain and Europe is that virtually all bat species are declining and vulnerable. Our understanding of population status is poor as there is very little historical data for most bat species. Certain species, such as the horseshoe bats, are better understood and have well documented contractions in range and population size.

Given this general picture of decline in UK Government within the UK Biodiversity Action Plan has designated five species of bats as priority species (greater and lesser horseshoe bats, barbastelle, Bechstein's and pipistrelle). These plans provide an action pathway whereby the maintenance and restoration of the former populations levels are investigated.

### Legal Status of British Bats

Given the above position all British bats as well as their breeding sites and resting places enjoy national and international protection.

All bat species in the UK are fully protected under the Wildlife and Countryside Act 1981 (as amended) through inclusion in Schedule 5. All bats are also listed on Annex IV (and some on Annex II) of the EC Habitats Directive giving further, European protection. Taken together the act and Conservation of Habitats and Species Regulations 2010\* make it an offence to; intentionally or deliberately kill, injure or capture (take) bats;

- Deliberately disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts;
- Possess or transport a bat or any part of a bat, unless acquired legally;
- Sell, barter or exchange bats, or parts of bats

The legislation although not strictly affording protection to foraging grounds does protect roost sites. Bat roosts are protected at all times of the year whether or not bats are present. Any disturbance of a roost due to development must be licenced.

*\*the regulations that delivered by the UK's commitments to the Habitats Directive.*

### Breeding birds

All nesting birds are protected under the Wildlife and Countryside Act (as amended) 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. Furthermore a number of birds enjoy further protection under that Act and are listed on Schedule 1 of the Act. These further protected birds are also protected from disturbance and it may be necessary to operate "no-go" buffer zones around such nests – typically out to 100m.

Planning policy guidance on the treatment of species identified as priorities under the biodiversity action programme suggests that local authorities should take measures to protect

the habitats of these species from further decline through policies in local development documents and should ensure that they are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. The conservation of these species should be promoted through the incorporation of beneficial biodiversity designs within developments.

## Bats

All 18 species of bat common in the UK (17 known to be breeding) are fully protected under the Wildlife and Countryside Act (as amended) 1981 through inclusion in Schedule V of the Act. All bat species in the UK are also included in Schedule II of the Habitats Regulations 2010 which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("EC Habitats Directive") which defines European protected species of animals.

Bats species are afforded further protection by the Countryside and Rights of Way Act 2000; and the Natural Environment and Rural Communities Act 2006.

This combined legislation makes it an offence to:

Intentionally or deliberately kill, injure or capture bats.

Deliberately disturb bats, whether at roost or not.

Damage, destroy or obstruct access to bat roosts.

Possess or transport bats, unless acquired legally.

Sell, barter or exchange bats.

A bat roost is defined by the Bat Conservation Trust publication Bat Surveys—Good Practice Guidelines 2<sup>nd</sup> Edition as "the resting place of a bat" (BCT 2012). Generally however, the word roost is interpreted as "any structure or place, which any wild bat uses for shelter or protection."

Bats tend to re-use the same roosts; therefore legal opinion is guided by recent case law precedents<sup>3</sup>, that a roost is protected whether or not the bats are present at the time. This can include for summer roosts, used for breeding; or winter roosts, used for hibernating.

## Common Birds

All common wild birds are protected under The Wildlife and Countryside Act 1981.

This legislation makes it an offence to:

Kill, injure or take wild birds.

---

<sup>3</sup> Internet search for e.g. the Woolley case (R. Simon Woolley v. Cheshire East Borough Council) and see here: [http://www.naturalengland.org.uk/Images/WoolleyVsCheshireEastBC\\_tcm6-12832.pdf](http://www.naturalengland.org.uk/Images/WoolleyVsCheshireEastBC_tcm6-12832.pdf)

Take, damage or destroy the nest of wild birds while it is in use or being built.

Take or destroy the eggs of wild birds.

Certain rare breeding birds are listed on Schedule I of The Wildlife and Countryside Act 1981. Under this legislation they are afforded the same protection as common wild birds and are also protected against disturbance whilst building a nest or on or near a nest containing eggs and/or unfledged young e.g. Barn Owl *Tyto alba*.

## Reptiles

There are six species of reptiles in Great Britain (Edgar et al. 2010) and four of these are commonly found; the grass snake *Natrix natrix*, adder *Viper aberus*, common lizard *Zootoca vivipara* and slow worm *Anguis fragilis* ("common reptiles.")

All native British species of reptiles are legally protected through their inclusion in Schedule V of the Wildlife and Countryside Act 1981. As such, all species are protected from deliberate killing or injury. Therefore, where development is permitted, and there will be a significant change in land use, a reasonable effort must be undertaken to avoid committing an offence. The same act makes the trading of native reptile species a criminal offence without appropriate licensing.

Two species of reptile; the smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*, are further protected through their inclusion in Schedule II of the Habitats Regulations 2010 which transposes Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("EC Habitats Directive"), which defines European protected species of animals ("rare reptiles.")

This legislation makes it an offence to:

Intentionally or deliberately kill, injure common and rare reptiles.

Deliberately disturb or capture rare reptiles.

Damage, destroy or obstruct access to rare reptile habitat.

Possess or transport a rare reptile or any part of a rare reptile, unless acquired legally.

Sell, barter or exchange common and rare reptiles.

Rare reptile species occupy only highly restricted ranges in the extreme south east of coastal England, with isolated populations of sand lizard in e.g. coastal Wales and Cornwall. Smooth snake populations are isolated to lowland heaths in e.g. Surrey, Hampshire, Dorset and West Sussex.

## Badgers

Badgers *Meles meles* are vulnerable to baiting, hunting and the detrimental impacts of development on their habitat. Both the badger and its habitat are protected under The Protection of Badgers Act 1992, Schedule V of the Wildlife and Countryside Act 1981, and Appendix III of the Bern Convention 1979.

This legislation makes it an offence to:

Kill, injure, take or possess a badger.

Interfere with, damage or destroy a badger sett including e.g. obstruct access to a badger sett.

Cruelly treat or harm a badger.

Disturb a badger in a sett.

Penalties for offences are documented (NE 2010) as fines of up to £5,000 and imprisonment for each illegal sett interference or damage or death to a badger.

#### Great Crested Newts

Populations of great crested newts *Triturus cristatus* declined considerably in the late twentieth century (Langton et al. 2001) due to the intensification of agriculture. They require ponds with good water quality and as they spend most of their life on land these ponds must be surrounded by high quality terrestrial habitat.

Great crested newts are listed in both Annex IV of the EC Habitats Directive and in Schedule V of the Wildlife and Countryside Act 1981.

GCN are afforded further protection by the Countryside and Rights of Way Act 2000; and the Natural Environment and Rural Communities Act 2006.

This combined legislation makes it an offence to:

Deliberately kill, injure or capture a great crested newt.

Deliberately disturb a great crested newt.

Damage, destroy or obstruct access to a structure used for shelter or protection by a great crested newt.

Possess or transport a great crested newt.

## Appendix V

### European Protected Species

| Species                        | Type                                                                                                          |
|--------------------------------|---------------------------------------------------------------------------------------------------------------|
| Horseshoe Bats                 | All                                                                                                           |
| Typical bats                   | All                                                                                                           |
| Large blue butterfly           | <i>Felis silvestris</i>                                                                                       |
| Dolphins, porpoises and whales | All                                                                                                           |
| Dormouse                       | <i>Muscardinus avellanarius</i>                                                                               |
| Sand lizard                    | <i>Lacerta agilis</i>                                                                                         |
| Great Crested Newt             | <i>Triturus cristatus</i>                                                                                     |
| Otter                          | <i>Lutra lutra</i>                                                                                            |
| Smooth snake                   | <i>Coronella austriaca</i>                                                                                    |
| Sturgeon fish                  | <i>Acipenser sturio</i>                                                                                       |
| Natterjack toad                | <i>Bufo calamita</i>                                                                                          |
| Marine turtles                 | <i>Caretta spp</i> , <i>Lepidochelys kempii</i> , <i>Eretmochelys imbricate</i> , <i>Dermochelys coriacea</i> |
| Shore dock                     | <i>Rumex rupestris</i>                                                                                        |
| Killarney fern                 | <i>Trichomanes speciosum</i>                                                                                  |
| Early gentian                  | <i>Gentianella angelica</i>                                                                                   |
| Lady's slipper                 | <i>Cypripedium calceolus</i>                                                                                  |
| Creeping marshwort             | <i>Apium repens</i>                                                                                           |
| Slender naiad                  | <i>Najas flexilis</i>                                                                                         |
| Fen Orchid                     | <i>Liparis loeselii</i>                                                                                       |
| Floating-leaved water plantain | <i>Luronium natans</i>                                                                                        |
| Yellow marsh saxifrage         | <i>Saxifraga hirculus</i>                                                                                     |

# Nationally Protected Species

| Species - Schedule 5 of the Wildlife and Countryside Act 1981 | Latin Name                   |
|---------------------------------------------------------------|------------------------------|
| Adder 1                                                       | <i>Vipera berus</i>          |
| Allis Shad2                                                   | <i>Alosa alosa</i>           |
| Anemone, Ivell's Sea                                          | <i>Edwardsia ivelli</i>      |
| Anemone, Starlet Sea                                          | <i>Nematosella vectensis</i> |
| Apus                                                          | <i>Triops cancriformis</i>   |
| Bats, Horseshoe (all species)                                 | <i>Rhinolophidae</i>         |
| Bats, Typical (all species)                                   | <i>Vespertilionidae</i>      |
| Beetle                                                        | <i>Graphoderus zonatus</i>   |
| Beetle                                                        | <i>Hypebaeus flavipes</i>    |
| Beetle                                                        | <i>Parcymus aeneus</i>       |
| Beetle, Lesser Silver Water                                   | <i>Hydrochara caraboides</i> |
| Beetle, Mire Pill3                                            | <i>Curimopsis nigrita</i>    |
| Beetle, Rainbow Leaf                                          | <i>Chrysolina cerealis</i>   |
| Beetle, Stag4                                                 | <i>Lucanus cervus</i>        |
| Beetle, Violet Click                                          | <i>Limoniscus violaceus</i>  |

|                                                      |                                 |
|------------------------------------------------------|---------------------------------|
| Burbot                                               | <i>Lota lota</i>                |
| Butterfly, Northern Brown Argus                      | <i>Aricia artaxerxes</i>        |
| Butterfly, Adonis Blue <sup>6</sup>                  | <i>Lysandra bellargus</i>       |
| Butterfly, Chalkhill Blue <sup>7</sup>               | <i>Lysandra coridon</i>         |
| Butterfly, Silver-studded Blue <sup>8</sup>          | <i>Plebejus argus</i>           |
| Butterfly, Small Blue <sup>9</sup>                   | <i>Cupido minimus</i>           |
| Butterfly, Large Copper                              | <i>Lycaena dispar</i>           |
| Butterfly, Purple Emperor <sup>10</sup>              | <i>Apatura iris</i>             |
| Butterfly, Duke of Burgundy Fritillary <sup>11</sup> | <i>Hamearis lucina</i>          |
| Butterfly, Glanville Fritillary <sup>12</sup>        | <i>Melitaea cinxia</i>          |
| Butterfly, Heath Fritillary                          | <i>Melicta athalia</i>          |
| Butterfly, High Brown Fritillary                     | <i>Argynnis adippe</i>          |
| Butterfly, Marsh Fritillary <sup>13</sup>            | <i>Eurodryas aurinia</i>        |
| Butterfly, Pearl-bordered Fritillary <sup>14</sup>   | <i>Boloria euphrosyne</i>       |
| Butterfly, Black Hairstreak <sup>15</sup>            | <i>Strymonidia pruni</i>        |
| Butterfly, Brown Hairstreak <sup>16</sup>            | <i>Thecla betulae</i>           |
| Butterfly, White Letter Hairstreak <sup>17</sup>     | <i>Stymonida w-album</i>        |
| Butterfly, Large Heath <sup>18</sup>                 | <i>Coenonympha tullia</i>       |
| Butterfly, Large Blue                                | <i>Maculinea arion</i>          |
| Butterfly, Mountain Ringlet <sup>19</sup>            | <i>Erebia epiphron</i>          |
| Butterfly, Chequered Skipper <sup>20</sup>           | <i>Carterocephalus palaemon</i> |
| Butterfly, Lulworth Skipper <sup>21</sup>            | <i>Thymelicus acteon</i>        |
| Butterfly, Silver Spotted Skipper <sup>22</sup>      | <i>Hesperia comma</i>           |
| Butterfly, Swallowtail                               | <i>Papilio machaon</i>          |
| Butterfly, Large tortoiseshell <sup>23</sup>         | <i>Nymphalis polychloros</i>    |
| Butterfly, Wood White <sup>24</sup>                  | <i>Leptidea sinapis</i>         |
| Cat, Wild                                            | <i>Felis silvestris</i>         |
| Cicada, New Forest                                   | <i>Cicadetta montana</i>        |

|                                            |                                  |
|--------------------------------------------|----------------------------------|
| Crayfish, Atlantic Stream (White-clawed)25 | <i>Austropotamobius pallipes</i> |
| Cricket, Field                             | <i>Gryllus campestris</i>        |
| Cricket, Mole                              | <i>Gryllotalpa gryllotalpa</i>   |
| Damselfly, Southern                        | <i>Coenagrion mercuriale</i>     |
| Dolphin, Bottle-nosed                      | <i>Tursiops truncatus</i>        |
| Dolphin, Common                            | <i>Delphinus delphis</i>         |
| Dormouse                                   | <i>Muscardinus avellanarius</i>  |
| Dragonfly, Norfolk Aeshna                  | <i>Aeshna isosceles</i>          |
| Frog, Common26                             | <i>Rana temporaria</i>           |
| Goby, Couch's                              | <i>Gobius couchii</i>            |
| Goby, Giant                                | <i>Gobius cobitis</i>            |
| Grasshopper, Wart-biter                    | <i>Decticus verrucivorus</i>     |
| Hatchet Shell, Northern                    | <i>Thyasira gouldi</i>           |
| Hydroid, Marine                            | <i>Clavopsella navis</i>         |
| Lagoon Snail                               | <i>Paludinella littorina</i>     |
| Lagoon Snail, De Folin's                   | <i>Caecum armoricum</i>          |
| Lagoon Worm, Tentacled                     | <i>Alkmaria romijni</i>          |
| Leech, Medicinal                           | <i>Hirudo medicinalis</i>        |
| Lizard, Sand                               | <i>Lacerta agilis</i>            |
| Lizard, Viviparous27                       | <i>Lacerta vivipara</i>          |
| Marten, Pine                               | <i>Martes martes</i>             |
| Mat, Trembling Sea                         | <i>Victorella pavida</i>         |
| Moth, Barberry Carpet                      | <i>Pareulype berberata</i>       |
| Moth, Black-veined                         | <i>Siona lineata</i>             |
| Moth, Essex Emerald                        | <i>Thetidia smaragdaria</i>      |
| Moth, Fiery Clearwing                      | <i>Bembecia chrysidiformis</i>   |
| Moth, Fisher's Estuarine                   | <i>Gortyna borellii</i>          |
| Moth, New Forest Burnet                    | <i>Zygaena viciae</i>            |

|                            |                                    |
|----------------------------|------------------------------------|
| Moth, Reddish Buff         | <i>Acosmetia caliginosa</i>        |
| Moth, Sussex Emerald       | <i>Thalera fimbrialis</i>          |
| Mussel, Fan28              | <i>Atrina fragilis</i>             |
| Mussel, Freshwater Pearl   | <i>Margaritifera margaritifera</i> |
| Newt, Great Crested        | <i>Triturus cristatus</i>          |
| Newt, Palmate              | <i>Triturus helveticus</i>         |
| Newt, Smooth               | <i>Triturus vulgaris</i>           |
| Otter, Common              | <i>Lutra lutra</i>                 |
| Porpoise, Harbour          | <i>Phocaena phocaena</i>           |
| Sandworm, Lagoon           | <i>Armandia cirrhosa</i>           |
| Sea Fan, Pink31            | <i>Eunicella verrucosa</i>         |
| Sea horse, Short-snouted32 | <i>Hippocampus hippocampus</i>     |
| Sea horse, Spiny33         | <i>Hippocampus guttulatus</i>      |
| Sea Slug, Lagoon           | <i>Tenellia adpersa</i>            |
| Shad, Twaite34             | <i>Alosa fallax</i>                |
| Shark, Basking             | <i>Cetorhinus maximus</i>          |
| Shark, Angel35             | <i>Squatina squatina</i>           |
| Shrimp, Fairy              | <i>Chirocephalus diaphanus</i>     |
| Shrimp, Lagoon Sand        | <i>Gammarus insensibilis</i>       |
| Slow-worm36                | <i>Anguis fragilis</i>             |
| Snail, Glutinous           | <i>Myxas glutinosa</i>             |
| Snail, Roman37             | <i>Helix pomatia</i>               |
| Snail, Sandbowl            | <i>Catinella arenaria</i>          |
| Snake, Grass38             | <i>Natrix helvetica</i>            |
| Snake, Smooth              | <i>Coronella austriaca</i>         |
| Spider, Fen Raft           | <i>Dolomedes plantarius</i>        |
| Spider, Ladybird           | <i>Eresus niger</i>                |

|                               |  |                                                 |
|-------------------------------|--|-------------------------------------------------|
| Squirrel, Red                 |  | <i>Sciurus vulgaris</i>                         |
| Sturgeon                      |  | <i>Acipenser sturio</i>                         |
| Toad, Common <sup>39</sup>    |  | <i>Bufo bufo</i>                                |
| Toad, Natterjack              |  | <i>Bufo calamita</i>                            |
| Turtles, Marine (all species) |  | <i>Dermochelyidae</i> and<br><i>Cheloniidae</i> |
| Vendace                       |  | <i>Coregonus albula</i>                         |
| Vole, Water                   |  | <i>Arvicola terrestris</i>                      |
| Walrus                        |  | <i>Odebenus rosmarus</i>                        |
| Whale (all species)           |  | Cetacea                                         |
| Whitefish                     |  | <i>Coregonus lavaretus</i>                      |